

### CLAIMS

1. (previously amended) A compound of formula  $E-C_a-R-C_b-A$ , wherein E is a therapeutic or diagnostic agent, R is a reactive group,  $C_b$  and  $C_a$  are optional first and second connecting respectively, and A is an affinity group comprising any molecule or part of a molecule possessing specific binding determinants for a target molecule having an affinity for human serum albumin, wherein affinity group A comprises a sequence of amino acid residues  $-O_1-O_2-X_1-X_2-B$  in which the amino acid residues are independently selected from the group of all twenty naturally occurring amino acids.

2. (previously amended) A compound according to claim 58, wherein amino acid residue  $O_1$  is selected from the group consisting of phenylalanine, arginine, glutamine, tyrosine, glutamic acid and tryptophan; amino acid residue  $O_2$  is selected from the group consisting of leucine, arginine, glutamic acid, tryptophan and phenylalanine; amino acid residue  $X_1$  is selected from the group consisting of phenylalanine, tryptophan, methionine and tyrosine; amino acid residue  $X_2$  is selected from the group consisting of serine, arginine and glutamic acid; and amino acid residue B is selected from the group consisting of serine, arginine and glutamic acid.

Claim 3 (previously cancelled)

4. (previously amended) A compound according to claim 58, wherein one of the five amino acid residues is an L amino acid residue and the other four amino acid residues are D amino acid residues.

5. (previously amended) A compound according to claim 2, wherein the L-amino acid residue is selected from the group consisting of the amino acid residue  $O_2$ , the amino acid residue  $X_1$ , and the amino acid residue  $X_2$ .

6. (previously amended) A compound according to claim 58, wherein one of the five amino acid residues is a D-amino acid residue and the other four amino acid residues are L-amino acid residues.
7. (original) A compound according to claim 6, wherein the D-amino acid residue is selected from the group consisting of the amino acid residue O<sub>2</sub>, amino acid residue X<sub>1</sub>, and amino acid residue X<sub>2</sub>.
8. (original) A compound according to claim 7, wherein the D-amino acid residue is the amino acid residue O<sub>2</sub>.
9. (previously amended) A compound according to claim 58, wherein O<sub>1</sub> is phenylalanine and O<sub>2</sub> is leucine.
10. (previously amended) A compound according to claim 58, wherein O<sub>1</sub> is arginine and O<sub>2</sub> is arginine.
11. (previously amended) A compound according to claim 58, wherein O<sub>1</sub> is glutamine and O<sub>2</sub> is glutamic acid.
12. (previously amended) A compound according to claim 58, wherein O<sub>1</sub> is glutamic acid and O<sub>2</sub> is tryptophan.
13. (previously amended) A compound according to claim 58, wherein O<sub>1</sub> is tryptophan and O<sub>2</sub> is tryptophan.

14. (previously amended) A compound according to claim 58, wherein O<sub>1</sub> is tryptophan and O<sub>2</sub> is glutamic acid.
15. (previously amended) A compound according to claim 58, wherein X<sub>1</sub> is tyrosine.
16. (previously amended) A compound according to claim 58, wherein X<sub>2</sub> is glutamic acid.
17. (previously amended) A compound according to claim 58, wherein B is glutamic acid.
18. (previously amended) A compound according to claim 58, wherein O<sub>1</sub> is phenylalanine, O<sub>2</sub> is D-leucine, X<sub>1</sub> is tyrosine, X<sub>2</sub> is glutamic acid, and B is glutamic acid.
19. (previously amended) A compound according to claim 58, wherein the amino acid residue B is a C-terminal amino acid residue.
20. (original) A compound according to claim 19, wherein the affinity group comprises the amino acid sequence -O<sub>1</sub>-O<sub>2</sub>-X<sub>1</sub>-X<sub>2</sub>-B-NH<sub>2</sub>.
21. (previously amended) A compound according to claim 58, wherein the the reactive group comprises a functional group selected from the group consisting of carboxy, phosphoryl, alkyl esters, thioesters, phosphoesters, ortho esters, imidates, mixed anhydrides, amides, thioamine and disulphides.
22. (previously amended) A compound according to claim 21, wherein C<sub>b</sub> is absent and the reactive group is bonded directly to the O<sub>1</sub> amino acid residue in the affinity group.

23. (original) A compound according to claim 22, wherein the reactive group is bonded to the O<sub>1</sub> amino acid residue by an amide linkage.

24. (previously amended) A compound according to claim 21, wherein the reactive group has the formula -X-R<sub>1</sub>-C(O)-, wherein R<sub>1</sub> comprises a substituted or unsubstituted aromatic group and X is selected from the group consisting of S, O and N.

25. (original) A compound according to claim 24, wherein X is bonded directly to an aromatic carbon atom in R<sub>1</sub>.

26. (original) A compound according to claim 24, wherein R<sub>1</sub> is unsubstituted phenyl.

27. (previously amended) A compound according to claim 26, wherein -X- and -C(O)- are bonded to the phenyl in a para configuration.

28. (previously amended) A compound according to claim 24, wherein R<sub>1</sub> is phenyl substituted with one or more groups selected from the group consisting of a halogen, NO<sub>2</sub>, SO<sub>2</sub>NH<sub>2</sub>, SO<sub>2</sub>NHF, CF<sub>3</sub>, CCl<sub>3</sub>, CBr<sub>3</sub>, C≡N, SO<sub>3</sub>H, CO<sub>2</sub>H, CHO, OH, NHCOCH<sub>3</sub>, OCH<sub>3</sub>, CH<sub>3</sub> and CH<sub>2</sub>CH<sub>3</sub>.

29. (original) A compound according to claim 24, wherein the reactive moiety is bonded directly to the O<sub>1</sub> residue via the carboxyl carbon.

30. (previously amended) A compound according to claim 21 wherein C<sub>b</sub> is present.

31. (previously amended) A compound according to claim 28, wherein C<sub>b</sub> is bonded to the reactive group via an ester, thioester, amide, sulfonate ester or sulfonamide linkage.

32. (previously amended) A compound according to claim 30, wherein C<sub>b</sub> is bonded to the O<sub>1</sub> amino acid residue in the affinity group via an ester, thioester, amide, sulfonamide, urea, thiourea or carbamate linkage.

33. (previously amended) A compound according to claim 30, wherein C<sub>b</sub> comprises a backbone chain of between about 1 and about 25 atoms.

34. (previously amended) A compound according to claim 33, wherein C<sub>b</sub> comprises a backbone chain of between about 2 and about 16 carbon atoms.

35. (previously amended) A compound according to claim 30, wherein C<sub>b</sub> comprises an unsaturated carbon atom backbone chain of between about 1 and about 25 atoms.

Claims 36-39 (previously cancelled)

40. (previously amended) A compound according to claim 58 wherein C<sub>a</sub> is present.

41. (previously amended) A compound according to claim 40, wherein C<sub>a</sub> is bonded to E by an ester, thioester, amide, sulfonate ester or sulfonamide linkage.

42. (previously amended) A compound according to claim 40, wherein C<sub>a</sub> is bonded to the reactive group by an ester, thioester, amide or sulfonate ester linkage.

43. (previously amended) A compound according to claim 40, wherein C<sub>a</sub> comprises a backbone chain of between about 1 and about 25 atoms.
44. (previously amended) A compound according to claim 43, wherein C<sub>a</sub> comprises a backbone chain of between about 2 and about 16 carbon atoms.
45. (previously amended) A compound according to claim 40, wherein C<sub>a</sub> comprises an unsaturated carbon atom backbone chain of between about 1 and about 25 atoms.
46. (previously amended) A compound according to claim 1, wherein the diagnostic agent comprises biotin.
47. (previously amended) A compound according to claim 46, wherein biotin is bonded directly to the reactive group by an ester, thioester or amide linkage.
48. (previously amended) A compound according to claim 46, wherein the reactive group has the formula -X-Ph-C(O)-, and wherein X is oxygen, sulfur or nitrogen.
49. (previously amended) A compound according to claim 48, wherein the -X- and -C(O)- on the phenyl group are bonded in a para configuration.
50. (previously amended) A compound according to claim 47 wherein C<sub>a</sub> is present.

51. (previously amended) A compound according to claim 50, wherein  $C_a$  is bonded to the biotin group by an amide linkage.

52. (previously amended) A compound according to claim 50, wherein  $C_a$  is  $-\text{NH}-(\text{CH}_2)_n-\text{C}(\text{O})-$ , wherein  $n$  is an integer between 1 and 25.

53. (previously amended) A compound according to claim 52, wherein  $C_a$  is  $-\text{NH}-(\text{CH}_2)_5-\text{C}(\text{O})-$ .

54. (previously amended) A compound according to claim 52, wherein  $C_a$  is  $-\text{NH}-\text{CH}_2-\text{C}(\text{O})-$ .

55. (original) A compound selected from the group consisting of biotin-S-Ph-C(O)-F/YEE-NH<sub>2</sub>, biotin-OPh-C(O)-F/YEE-NH<sub>2</sub>, LC-biotin-S-Ph-C(O)-F/YEE-NH<sub>2</sub>, biotin-Gly-OPh-C(O)-F/YEE-NH<sub>2</sub>, fluorescein-Gly-OPh-F/YEE-NH<sub>2</sub>, LC-biotin-OPh-C(O)-F/YEE-NH<sub>2</sub>, argatroban-AEA<sub>3</sub>-βAla-Gly-OPh-C(O)-F/YEE-NH<sub>2</sub>, and fluorescein-thiourea-AEA<sub>3</sub>-Gly-OPh-C(O)-F/YEE-NH<sub>2</sub>.

Claims 56-57 (previously cancelled).

58. (previously added) A compound as claimed in claim 1, wherein the target molecule comprises human serum albumin, and the affinity group A comprises a sequence of amino acid residues -O<sub>1</sub>-O<sub>2</sub>-X<sub>1</sub>-X<sub>2</sub>-B- wherein the amino acid residues are independently selected from the group consisting of all twenty naturally occurring amino acids in either L or D configuration.

59. (New) A compound as claimed in claim 1, wherein E is Argatroban,  $C_a$  is AEA<sub>3</sub>-βAla-Gly, R is -O-Ph-C(O)-,  $C_b$  is absent, and A is F/YEE-NH<sub>2</sub>.